

# Making Medicine Mercury-Free

## A Resource Guide for Mercury-Free Medicine

### Mercury Elimination— Preventive Medicine for Human Health and The Environment

Health Care Without Harm (HCWH) is an international coalition of more than 360 organizations in 40 countries, working together to eliminate pollution from health care practices without compromising safety or care. Health Care Without Harm is committed to transforming the health care industry so that it is no longer a source of environmental harm.

### Why Mercury has No Business in the Health Care Business

Mercury can be found in many health care devices, including fever thermometers, blood pressure cuffs, and esophageal dilators. Mercury is also found in many chemicals and measurement devices used in health care laboratories. If these products are spilled, broken or disposed of improperly, there is a potential for significant harm to human health and the environment. Medical waste incinerators, as well as municipal waste incinerators, emit mercury when they burn wastes that contain mercury. According to the U.S. Environmental Protection Agency (EPA), medical waste incinerators are the fourth largest source of mercury to the environment.<sup>1</sup> Hospitals are also known to contribute 4-5% of the total wastewater mercury load.<sup>2</sup>

Mercury-containing devices improperly disposed of in a landfill are also a potential source of harm. Mercury fever thermometers alone contribute about 17 tons of mercury to solid waste landfills annually.<sup>3</sup>

### Health Implications

Mercury is a reproductive toxin and a potent neurotoxin—it affects the brain and the central nervous system. Pregnant women, women of child-bearing age and small children are at the greatest risk. Mercury can cross the placenta and cause irreparable neurological damage to the fetus. A National Academies of Science report from July, 2000 showed that 60,000 children are at risk of being born in the United States each year with neurological problems that could lead to poor school performance because of exposure to methylmercury in utero.<sup>4</sup> In March, 2001 a study from the Centers for Disease Control and Prevention sampled the mercury levels in the blood, hair and urine of women and children and found that one in 10 women have mercury levels high enough to cause their children neurological damage — putting about 395,000 babies a year in danger.<sup>5</sup>

### Environmental Implications

Mercury in the air is transported to water bodies primarily through precipitation. Mercury released to the environment can cause early death, weight loss, and reproductive problems in wildlife. In fish, (methyl) mercury can concentrate to levels one million times higher than those in the surrounding water. Over forty states have fish consumption advisories because of widespread mercury contamination.

## Economic Implications

Many hospitals are now required to meet strict wastewater treatment discharge limits for mercury, and this regulatory trend is likely to continue. Mercury spill training is costly and in some parts of the country, JCAHO has issued recommendations to hospitals for inadequate staff training on mercury clean-up. There are also countless stories of mercury spills in hospitals where mercury cleanup costs have been substantially higher than the cost of mercury-free alternatives. By eliminating mercury, hospitals can not only protect the health of local communities, but their “bottom line” as well.

## Regulatory Implications

By Federal law, mercury is a regulated waste; as a result, its management can be quite expensive. Using mercury-containing devices requires a “mercury management policy” and a spill response plan for emergencies. Costs associated with mercury spills are high — often in the thousands of dollars — and can pose health risks for health care staff and patients. Compliance with regulations for disposal of mercury-contaminated waste with a hazardous waste hauler may result in incineration of the waste, with subsequent mercury emissions to the environment. In addition, elemental mercury recycling may keep it out of the environment in the short-term, but its reuse in new products poses the same eventual risk to human health. Hospitals can avoid the risk of mercury management altogether by using non-mercury alternatives. As leading health care institutions across the country, such as Dartmouth Hitchcock, the Mayo Clinic, and the National Institutes of Health now recognize; safe, effective alternatives exist for nearly all traditional health care uses of mercury, from temperature and blood pressure measurement to fixatives used in the lab.

## How Health Care Without Harm is Addressing the Problem

In 1998, Health Care Without Harm kicked off the ‘Making Medicine Mercury-Free’ program by asking hospitals to take a pledge to phase-out mercury-containing products in their facilities. HCWH has also provided educational and technical resources to those hospitals implementing mercury elimination programs. As of August, 2001, over 600 hospitals and clinics had signed the pledge to go mercury-free.

In September, 2001 HCWH and the Hospitals for a Healthy Environment (H2E) partnership merged their pledge programs into one national pledge initiative. H2E is a partnership between HCWH, the American Hospital Association (AHA), the American Nurses Association (ANA) and the U.S. Environmental Protection Agency (EPA). As part of this collaboration, HCWH will continue to assist health care providers in meeting this important mercury elimination goal.

## What States and Cities are Doing

Communities across the country are holding mercury thermometer exchanges in an effort to get the toxic metal out of family medicine cabinets and to educate the community about the dangers of mercury. The exchanges are designed so that residents can bring in their mercury thermometers for recycling and receive a new non-mercury alternative at the same time. To assist in these efforts, HCWH has developed a resource guide entitled *How to Plan and Hold a Mercury Fever Thermometer Exchange*. You can order this and several other publications or sign up for the H2E listserv by filling out the form on page four.

Cities and states across the country are taking a proactive approach to mercury elimination. For example, San Francisco, CA; Ann Arbor, MI; Duluth, MN; Boston, MA; Chicago, IL; and states, such as New Hampshire, Maine, Maryland and Minnesota have prohibited the sale, manufacture and distribution of mercury thermometers within their jurisdictions. City, state and federal legislation is pending across the country to eliminate the use of mercury and mercury-containing products.

## What Your Hospital Can Do

- **Take the Making Medicine Mercury-Free Pledge** and join the hundreds of medical facilities across the country that have begun the process of eliminating their use of mercury. The eventual elimination of mercury-containing products is the only way to keep mercury out of the environment and to reduce its impacts on human health. To take the pledge, please visit the H2E website ([www.h2e-online.org](http://www.h2e-online.org)) and gain recognition for your commitment to improving environmental health. Once you have embarked on your mercury elimination program, you will be eligible to receive a Making Medicine Mercury Free Award.
- **Join the H2E listserv** to share and learn technical information, find educational tools and identify practical strategies for mercury elimination and discuss other pollution prevention and waste minimization issues. To join the listserv, go to [www.h2e-online.org](http://www.h2e-online.org).
- **Conduct a mercury audit** to identify all uses and sources of mercury in your institution.
- **Commit to eliminate the use of mercury** by investigating opportunities to phase out mercury-containing items where fewer barriers exist and immediate steps can be taken. For example, investigate replacing mercury-filled patient thermometers with digital or electronic thermometers; replacing

mercury with water in Miller-Abbott Tubes, replacing mercury-containing bougies or esophageal dilators with silicon ones; or replacing mercury-filled blood pressure measuring devices with aneroid units.

- **Implement a “Mercury-Free Purchasing Policy.”** Assign materials management staff to communicate with suppliers about the policy and to work with staff on finding non-mercury alternatives.
- **Educate and train your employees** about facility protocols, including information about mercury and its effects on human health and the environment.
- **Hold a mercury thermometer exchange** for your employees.
- **Discontinue sending mercury thermometers home** with the parents of newborns and other patients.

For more information, please contact:

### Health Care Without Harm

1755 S Street, NW, Suite 6B  
Washington, DC 20009  
[www.noharm.org](http://www.noharm.org)  
Phone: 202-234-0091  
Fax: 202-234-9121  
E-mail: [info@hcwh.org](mailto:info@hcwh.org)

You may also contact the technical staff listed on the H2E website ([www.h2e-online.org](http://www.h2e-online.org)) for continued technical assistance and support.

## Resource List

### Publications

*A New Era: The Elimination of Mercury Sphygmomanometers*  
*How to Plan and Hold a Mercury Fever Thermometer Exchange*  
*Mercury Thermometers and Your Family's Health*  
*Making Medicine Mercury Free*  
*The Mercury Problem- Fast Facts*  
*What's Wrong With Mercury Thermometers?*  
Health Care Without Harm, 1755 S St., NW  
Suite 6B Washington, DC 20009  
(202) 234-0091 or [info@hcwh.org](mailto:info@hcwh.org)

*Becoming a Mercury-Free Facility: A Priority to be Achieved by the Year 2000.* Hollie Shaner, RN, MSA. AHA/ASHES 1-800-AHA-2626.

*Blueprint for Mercury Elimination* Western Lake Superior Sanitary District; (38-page booklet, 218-722-3336, free).

*Eliminating Mercury Use in Hospital Laboratories: A Step toward Zero Discharge:* Public Health Reports, July/August 1999 Volume 114 p353-358.

*Medical waste pollution prevention. Keep mercury out of the wastewater stream.* U.S. Environmental Protection Agency, Region 5. Chicago, IL.

*Mercury.* Western Lake Superior Sanitary District. Duluth, MN.

*Mercury Pollution Prevention in Healthcare: A Prescription for Success.* National Wildlife Federation, Great Lakes Natural Resource Center. NWF/Great Lakes Natural Resource Center, 506 East Liberty, 2nd Floor, Ann Arbor MI 48104- 2210. (734) 669-3351.

*Mercury Use in Hospitals and Clinics.* 20-minute video and guidebook. Minnesota Office of Environmental Assistance, 520 Lafayette Road N., 2nd Floor, St. Paul, MN 55155; (612) 296-3417; (800) 657-3843.

*Pollution Prevention for Hospitals and Medical Facilities and Best Management Practices for Hospitals and Medical Facilities.* Palo Alto Regional Water Quality Control Plant, 2501 Embarcadero Way, Palo Alto CA 94303. (415) 329- 2598.

*Reducing Mercury Use in Health Care, Promoting a Healthier Environment, A How-to Manual.* Monroe County, New York Department of Health. (716) 292-3935.

*The Case Against Mercury: Rx for Pollution Prevention* (poster and booklet). Created in cooperation with U.S. Environmental Protection Agency. Terrine Institute, 4 Herbert Street, Alexandria VA 22305, Region 5. (703) 548- 5473 [www.terrene.org](http://www.terrene.org).

### Video

*Agents of Change: Mercury Waste Solutions.* American Hospital Association: 1-800-AHA-2626

*Mercury and the Healthcare Professional* (17 minutes). Minnesota Office of Environmental Assistance and the US EPA, Region 5. Contact Emily Moore, Minnesota Office of Environmental Assistance, 520 Lafayette Road N., 2nd Floor, St. Paul, MN 55155- 4100. (612) 215-0201.

## Web Resources

Health Care Without Harm  
[www.noharm.org](http://www.noharm.org)

Hospitals for a Healthy Environment (H2E)  
[www.h2e-online.org](http://www.h2e-online.org)

First Do No Harm, Environmental Working Group, 1997.  
[www.ewg.org/pub/home/HCWC/hcwh.html](http://www.ewg.org/pub/home/HCWC/hcwh.html)

Harvard University Wastewater Practices: Mercury Discharge  
[www.uos.harvard.edu/ehs/onl\\_fac\\_env\\_wp2.shtml](http://www.uos.harvard.edu/ehs/onl_fac_env_wp2.shtml)

Harvard University: Broken Mercury Thermometers  
[www.uos.harvard.edu/ehs/onl\\_fac\\_env\\_mer.shtml](http://www.uos.harvard.edu/ehs/onl_fac_env_mer.shtml)

Indiana Department of Environmental Management: Factsheet on Mercury Thermometers  
[www.state.in.us/idem/ctap/mercury/thermometers.html](http://www.state.in.us/idem/ctap/mercury/thermometers.html)

Massachusetts Water Resources Authority  
[www.mwra.state.ma.us](http://www.mwra.state.ma.us)

Massachusetts Medical, Academic and Scientific Community Organization (MASCO)  
[www.masco.org/mercury](http://www.masco.org/mercury)

Mercury in Medical Waste: Keeping Mercury Out of Medical Waste  
[www.p2pays.org/ref/01/00792.htm](http://www.p2pays.org/ref/01/00792.htm)

Mercury Use Reduction & Waste Prevention in Medical Facilities  
USEPA Region 5 and Purdue University  
[www.epa.gov/seahome/mercury/src/outmerc.htm](http://www.epa.gov/seahome/mercury/src/outmerc.htm)

Minnesota Office of Environmental Assistance: Mercury for Health Professionals  
[www.moea.state.mn.us/res/V7\\_2/mercury.cfm](http://www.moea.state.mn.us/res/V7_2/mercury.cfm)

National Institutes of Health: Mad as a Hatter—Campaign for a Mercury-Free NIH  
[www.nih.gov/od/ors/ds/nomercury/](http://www.nih.gov/od/ors/ds/nomercury/)

## Notes

1. 1997 Mercury Report to Congress
2. Personal communication, Western Lake Superior Sanitary District, Duluth, MN.
3. U.S. Environmental Protection Agency, 1996, Mercury Study Report to Congress, Science Advisory Board Review Draft, Vol. 2, p. 4-19, p. ES-3.
4. CDC Morbidity and Mortality Weekly Report. “Blood and Hair Mercury Levels in Young Children and Women of Child-Bearing Age—United States.” 1999 Vol. 50 No. 08:140, 03/02/2001.
5. National Academies of Science, National Research Council, July 2000. “Toxicological Effects of Methylmercury.”

## Making Medicine Mercury-Free

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_ Fax: (\_\_\_\_) \_\_\_\_\_

I am interested in HCWH educational materials. Please send me the following publications:

- ☐ How to Plan and Hold a Mercury Thermometer Exchange
- ☐ Mercury Thermometers and your Family's Health
- ☐ A New Era: The Elimination of Mercury Sphygmomanometers
- ☐ The Mercury Problem- Fast Facts
- ☐ What's Wrong With Mercury Thermometers?
- ☐ Hospitals for a Healthy Environment (H2E) Information

☐ Please sign me up for the H2E listserve. My email address is:

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For a complete list of materials produced by HCWH, visit our website at [www.noharm.org](http://www.noharm.org).

We'd like to know about any programs you have initiated in your facility, or any mercury related concerns or needs you might have. Please feel free to use the space below or attach/fax a separate sheet.

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Fax back form to HCWH at 202-234-9121 or email [info@hcwh.org](mailto:info@hcwh.org) for more information.



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This publication is part of *Going Green: A Resource Kit for Pollution Prevention in Health Care*. For additional copies of this or other publications included in the kit, or to find out how to get a complete kit, visit Health Care Without Harm on the Web at [www.noharm.org](http://www.noharm.org).



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